sponges, with five species, are recorded, with thirteen genera and twenty-one species of cœlenterata.

6. *New Species of Brachiopoda described in the Palæontology of New York*, Vol. VIII, Parts I and II, 1872–1892. By JAMES HALL, pp. 323–402, Pls. I–XIV.

In this paper are published the descriptions of 106 species of brachiopoda, which were described incidentally and sometimes figured without descriptions in the recent work upon the class by Hall and Clarke.

7. *A Handbook of the Genera of North American Palæozoic Bryozoa.* With an Introduction upon the Structure of Living Species. By G. B. SIMPSON, pp. 403–699. Pls. A–E, I–XXV, and 222 figures in the text.

The first portion of this work is devoted to the recent bryozoa, and contains the history of observations upon these organisms from 1599 to the present time, followed by a bibliography and an illustrated detailed account of the anatomy.

The second part is devoted to the fossil forms from the Palæozoic rocks, and contains a scheme of classification, the bibliography of the Palæozoic species of America, a list of the genera and species described, with references to authorship and the geologic formations in which they occur. The genera described number 156, the species enumerated are about 1100. The main portion of the second part is devoted to diagnoses of the genera, illustrated by 222 figures in the text and by 25 plates. STUART WELLER.

Petrology for Students, An Introduction to the Study of Rocks under the Microscope. By ALFRED HARKER, M.A., F.G.S. Second Edition, Revised. Cambridge, England, 1897.

A review of the first edition of this book by the present writer appeared in this JOURNAL, Vol. III, 1895, p. 856. The present edition reproduces the original text, with slight alterations, some of which follow the changes that appeared in the third edition of the second volume of Rosenbusch's *Mikroskopische Physiographie*, etc., published in 1896; besides the addition of numerous notices of American and Norwegian occurrences of various rocks, with references to their descriptions. The fuller mention of American occurrences increases

greatly the value of the book for students in America, who will find it very useful for this reason.

The alteration in the title of the second group of igneous rocks, according to the classification followed in this book, namely, from that of Intrusive to that of Hypabyssal, has not obviated the necessity for the apology made in the introduction to this group of rocks in the first edition, which is repeated in the second. The newer term is as inappropriate as the former one, and the criticism made in the review of the first edition holds with equal force in the present case.

J. P. I.

Rocks, Rock Weathering and Soils. By G. P. MERRILL. 8vo. 411 pp., Macmillan & Company, New York, 1897.

This admirable work brings together three subjects closely consecutive in the processes of nature but not previously associated as the subject of equally elaborate treatment in their mutual relations. The main emphasis of the work is placed on rock weathering, the description of rocks being in the main preliminary to this and that of soils a natural sequence. No attempt is made to treat rocks as such in an exhaustive way, nor soils as such. The discussion of weathering on the other hand is made as exhaustive as the present state of science will permit. The 168 pages of Parts 1 and 2 relating to minerals and rocks embrace a reasonably satisfactory treatment of these themes. This is as much perhaps as can be said of any attempt in this line in the present unfortunate condition of the classification and nomenclature of rocks and minerals. The relative fullness of treatment of the several rocks is measured in a degree by their importance in the production of soils. Very properly prominence is given to chemical composition, since this is a prime consideration in following the transition of the rocks into soils and secondary rocks. The numerous tables of analyses are a valuable feature. The use of terms is conservative and many of the intermediate stages in the gradation of one rock into another are left without specific nomenclature. The author files a protest against the tendency "which has resulted already in such monstrosities of nomenclature as *ouachitite*, *monchiquite*, *yogosite* and *absarokite*."

The subject of weathering and transportation occupies the heart of the book and constitutes its distinguishing feature. After a statement of the principles of weathering and of the agencies involved, the special